EXPLORING HOW BLOCKCHAIN TECHNOLOGY COULD ENHANCE FINANCIAL TRANSPARENCY THROUGH REGISTERS OF BENEFICIAL OWNERSHIP

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International initiatives to enhance financial transparency over legal persons and arrangements intended to prevent their misuse have been ongoing for over two decades, led primarily by the Organisation for Economic Co-operation and Development (OECD) the Financial Action Task Force (FATF), and the Member States of the Group of Twenty (G-20). The April 2009 London Summit of the G-20 was initially hailed as a watershed moment for global financial transparency, with the Leaders declaring at the Summit's conclusion that "the era of banking secrecy is over." At the June 2013 Summit held at Lough Erne, the G-8 committed to taking further concrete action based on a number of principles considered fundamental to the transparency of ownership and control of companies and legal arrangements. These principles were later largely reiterated by the G-20 in adopting the 'High Level Principles of Beneficial Ownership' at the Brisbane Summit in November 2014. Despite these efforts at the highest political levels, progress in actual implementation of reforms at a domestic level remains limited. The leak of the Panama Papers in April 2016 revealed the continuing ease with which opaque corporate vehicles and secrecy jurisdictions are able to be used to facilitate both the commission of predicate offences—including bribery, corruption, transfer mispricing, and tax evasion—and the laundering of the subsequent proceeds. Following the leaks, the G-20 called on the FATF and the OECD Global Forum to consider ways to improve implementation of the international standards on transparency, including on the availability of beneficial ownership information and its international exchange. This paper identifies relevant features of blockchain/distributed ledger technology, and seeks to explore its potential use in improving existing initiatives for the collection and distribution of information on beneficial ownership, particularly with respect to centralised registries such as those mandated by the European Union's 4th Anti-Money Laundering Directive.

1 INTRODUCTION

1.1 WHAT IS BLOCKCHAIN/DISTRIBUTED LEDGER TECHNOLOGY?

Blockchain is a technology based on shared or decentralised ledgers, which enables direct peer-to-peer transactions by resolving the trust issue between unrelated parties. Further, smart contracts can be programmed into the blockchain for autonomous self-execution. Key attributes of the technology's architecture that are responsible for its immense growth in popularity are considered below. Although all elements of the new technology are highly inter-connected and produce a profound effect essentially in a combined form, they are

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isolated for the purpose of analysis and facilitation of understanding of the principles underlying blockchain technology.

1.1.1 DECENTRALISATION OF DATA

Traditional network designs, regardless of their scale, are based on connection to a central hub that holds a master key providing limited users with an exclusive right to access, update and delete information from the network databases. The owners of the central database hub have the right and the responsibility to maintain the information, and all participants must trust them to do so. Blockchain is revolutionary in the sense that it distributes the information as well as the rights, responsibilities and trust to multiple participants in a shared network. It grants permissioned or full access to databases in the form of ledgers of information to each participant on the blockchain. This transforms a node on the network from a conventional provider and consumer of data, to the owner and point of storage of same data. Blockchain networks can be public (permissionless), private (permissioned), or a hybrid model.

1.1.2 DISTRIBUTED LEDGER TECHNOLOGY AND TRANSPARENCY

Equal availability of data, which is updated automatically and synchronically on all ledgers of all nodes on the blockchain, results in the fundamentally transparent and open ledger system. Transparency, entrenched into distributed ledger technology is a key attribute of the blockchain, which makes it highly valuable where access to information is traditionally compartmentalised or fragmented to a detrimental effect of users of such information. Where transparency is a concern, recent advances in blockchain designs provide for permissioned access to shared data, while future advances are focused on selective distribution of the data itself while still maintaining the ability for any participant to validate and trust all data, distributed to them or not.

1.1.3 PERMANENCE AND IMMUTABILITY OF RECORDS

Distribution of ownership and control over data across the blockchain network effectively results in the production of permanent and immutable records. The integrity of the records on the ledger is secured in a chain of linked blocks or groups of transactions. Each block of transactions contains new information as well as a validation, or hash, of the prior block and a time stamp. The new information must comply with a pre-defined set of rules, the fact of which must be attested to by a majority of special ‘mining’ participants. As a result, not one single party can tamper with the database undetected, as inconsistencies will be identified elsewhere on the network. Effectively, to amend or delete an existing record from the blockchain would require the same action, one which would violate the rules, to be executed by a majority or supermajority of all mining nodes on the blockchain ‘jointly and separately’, making the system virtually tamper-proof from a game theory and cryptographic sense (absent majority collusion).

Creation of a permanent immutable records that are both trusted and simultaneously held by a number of parties who can access such data, is a revolutionary invention of the blockchain technology. It embraces the opportunities offered today by inter-connectivity of the users and greatly enhances the reliability of information by shifting from a corruption-prone server-centred communication to a peer-to-peer communication.

1.1.4 VALIDATION AND SMART CONTRACTS

Another key attribute of the blockchain is enabling direct peer-to-peer transaction in value between two unrelated parties in settings where trust is lacking. Usually, a verification function is performed by an independent intermediary, which validates the process. On the blockchain, the validation is embedded into a transaction by the miners enforcing adherence

to the pre-defined rules in order to accept the transaction. For example, a common rule is to not allow more to be spent than is in the use's account. Another is to ensure the user trying to spend has the rights to the account, as represented by a password and a private encryption key. Smart contracts can be thought of as extensions from a foundational set of pre-define rules to situation-specific rules. These situation specific rules, which are also enforced by miners, allow the logic, validation and workflow traditionally performed by third party intermediaries to be programmed into the blockchain. A 'Smart Contract' is something of a misnomer, as it is neither a 'contract' in a conventional legal sense, nor is it particularly 'smart' outside of narrow parameters. Rather, it is a piece of code programmed to self-execute if certain conditions are satisfied. Nonetheless, the removal of a third party radically reduces transaction costs and may reduce delays in execution due to communication lags.

2 APPLYING BLOCKCHAIN TO THE ISSUE OF TRANSPARENCY AND BENEFICIAL OWNERSHIP

2.1 BACKGROUND

Corporate vehicles—such as companies, trusts, foundations, partnerships, and other types of legal persons and arrangements—are highly vulnerable to misuse for illicit purposes, and are an attractive way to disguise and convert the proceeds of crime before introducing them into the financial system: money launderers exploit cash-based 'front' businesses and other legal entities to disguise the source of their illicit gains; corrupt officials conduct transactions through bank accounts opened under the names of corporations and foundations; and individuals hide or shield their wealth from tax authorities and other creditors through trusts and partnerships.[2] The potential for corporate vehicles to be misused in these ways could be significantly reduced if information regarding both the legal and the ultimate beneficial owner, the source of the corporate vehicle's assets, and its activities, were readily available to the competent authorities.[3] This information can assist law enforcement agencies and tax administrations in identifying those persons responsible for the activity of concern, or who may have relevant information to further an investigation, which in turn allows them to more effectively 'follow the money' in financial investigations involving suspect accounts/assets held by corporate vehicles.[4]

However, countries face significant challenges when implementing measures designed to ensure the timely and accurate availability of beneficial ownership information. Many of these challenges can be traced back to lack of political will or inadequate legislative and/or institutional frameworks, though there is also the simple reality of resources: in the U.S. alone, more than two million corporations and limited liability companies (LLCs) are formed each year.[5] It is perhaps not all that surprising, therefore, that of the jurisdictions assessed to date against the revised FATF Standards, 75% have been rated either 'Partially Compliant' or 'Non-Compliant' on Recommendation 24 (which sets out requirements for transparency relating to legal persons), with 71% rated either 'Partially Compliant' or 'Non-Compliant' on Recommendation 25 (relating to transparency of legal arrangements).[6] It is clear from these

[2] OECD, 'Behind the Corporate Veil: Using Corporate Entities for Illicit Purposes,' (OECD Publication Service: Paris, 2001), at 3.
[3] See FATF, 'Transparency and Beneficial Ownership,' Guidance Paper, October 2014, at 3.
[4] Ibid.
[5] U.S. Senate, Homeland Security and Government Affairs, Permanent Subcommittee on Investigations, 'Levin-Coleman-Obama Bill Introduced to Stop Misuse of U.S. Companies,' 1 May 2008.
[6] Note that for each FATF Recommendation there are four possible levels of technical compliance: 'Compliant' (no shortcomings), 'Largely Compliant' (only minor shortcomings), 'Partially Compliant' (moderate

results that jurisdictions across the board are facing significant implementation challenges regarding financial transparency, especially in respect of beneficial ownership. Indeed, of the 31 jurisdictions that have been assessed since 2014, none have achieved a rating of 'High' and only four have achieved a 'Substantial' level of effectiveness in preventing the misuse of corporate vehicles under Immediate Outcome 5, with 87% of jurisdictions rated as either 'Moderate' or 'Low'.

These results are mirrored on the taxation side. In 2010, the OECD Global Forum instituted a peer review process to assess and ensure the availability of relevant information on ownership of corporate vehicles.[7] Of the 113 jurisdictions that have undergone both Phase 1 and Phase 2 peer reviews, over 27% were found to be either 'Partially' or 'Non-Compliant' with the relevant criteria regarding availability of ownership information, while only 30% were rated as fully 'Compliant'.

A number of common problems have been by both the FATF and OECD Global Forum regimes across all jurisdictions:

- Insufficient accuracy and accessibility of company identification and ownership information.
- Less rigorous implementation of customer due-diligence (CDD) measures by key gatekeepers such as lawyers, accountants, and trust and company service providers.
- Obstacles to information sharing such as data protection and privacy laws, which impede competent authorities from receiving timely access to adequate, accurate and up-to-date information on basic legal and beneficial ownership.

2.2 CURRENT LEGACY INITIATIVES TO ADDRESS THESE CHALLENGES

In order to meet international and domestic AML/CFT requirements, financial institutions and other designated non-financial businesses and professions (DNFBPs) must conduct CDD processes to verify customer identity and beneficial ownership, in accordance with 'know your customer' (KYC) regulations. These CDD/KYC procedures frequently lead to duplicative and redundant processes, in which customers are forced to provide often-identical information to multiple institutions. In turn, this increases compliance costs for the private sector in both on-boarding new customers and monitoring existing relationships, and impedes timely access to a centralised point of information by law enforcement and other competent authorities conducting financial investigations. A recent LexisNexis report produced for the British Bankers' Association suggests that most major international banks are spending between US$890 million and US$1.27 billion annually on financial crime compliance,[8] with total global spending expected to grow to more than US$8 billion per annum in 2017.[9] A number of solutions to these problems have been proposed, including the creation of

shortcomings), and 'Non-Compliant' (major shortcomings). For each Immediate Outcome there are four possible ratings for effectiveness: High level of effectiveness; Substantial level of effectiveness; Moderate level of effectiveness; and Low level of effectiveness.

[7] The first round of peer reviews was conducted in two phases: Phase 1 sought to determine whether institutional and legal frameworks in the reviewed jurisdictions were sufficient to satisfy potential requests for tax relevant information; Phase 2 sought to determine whether exchange of information was functioning efficiently and effectively. Following the two phases of the peer review process, jurisdictions were rated as either 'Compliant', 'Largely Compliant', 'Partially Compliant', or 'Non-Compliant'. It is important to note that while the first round of peer reviews touched on some issues concerning beneficial ownership (e.g. in relation to the use of nominees, trusts and bearer shares), the main focus was on the availability of information on the legal ownership of entities and legal arrangements, and the ability to exchange such information in a cross-border context.

[8] LexisNexis, 'Future Financial Crime Risks,' November 2015.

[9] pwc, 'Global Economic Crime Survey,' 2016.

centralised registries and greater adoption and reliance on emerging new technologies in the FinTech and RegTech space to streamline reporting obligations and more equally distribute costs amongst participants.

2.2.1 SHARED UTILITY MODELS

In the private sector, many reporting institutions are adopting 'Shared Utility' models as a possible solution to minimise the regulatory burden imposed by AML/CFT transparency requirements. Rather than each institution undertaking its own CDD/KYC procedures and compiling its own documentation, in a Shared Utility model they participate collectively in a service provided by a third party, paying only for the services and data they use. Customer information is kept in a single repository, which can then be accessed and shared among both participating financial institutions and relevant competent authorities, either locally or globally, depending on the registry model.

Shared Utility models can be based on industry (such as SWIFT's KYC Registry, which is focused on correspondent banking partners), or jurisdiction (for instance the newly-implemented Central Registry of Securitisation Asset Reconstruction and Security Interest of India (CERSAI), which functions as a central KYC records registry for all domestic reporting entities). However, the lack of collaboration between such providers has resulted in a fragmented market, with differing proprietary systems and licences, and no clear single point of access.

2.2.2 CENTRALISED REGISTRIES

In the public-sector space, a number of national and supra-national jurisdictions are pushing for the establishment of centralised registries containing basic legal and beneficial ownership information on corporate vehicles. These registries would enable companies to know whom they are doing business with, financial institutions to know whom their customers are, citizens to see who benefits from public funds, and law enforcement, tax administrations, and other competent authorities to prevent abuses of secrecy and hold individuals to account for financial crime including corruption and tax evasion. However, current registry models suffer from a number of shortcomings, including:

- Reliance on potentially inaccurate and unverified information. Many companies' registries have been criticised for acting in passive and archival roles, rarely verifying the information received, and thus failing to ensure its reliability. Primarily due to resource constraints, information is often taken on faith, with most documents and filings being accepted at face value unless an omission of information is blatant or the information supplied is plainly false. Data is usually updated passively, not actively, relying on either *ad hoc* self-reporting when there have been threshold changes in circumstance, or limited periodic reporting through, e.g., annual regulatory filings.

- A single depository of personal data (including beneficial ownership information) under the control of a centralised authority risks creating a single point of failure, raising significant security concerns. This was evident in the June 2016 leak of the Thomson Reuters 'World-Check' database, which contains approximately 2.7 million records and is used by 49 of the world's 50 largest banks and 9 of the top 10 global law firms, along with 300 government and intelligence agencies. The database identifies "heightened-risk" individuals and organisations, and is used to help to identify and manage financial, regulatory and reputational risk. Access to its contents is granted via a strict vetting process and the signing of non-disclosure agreements.

- National registries also tend to 'silo' data, which can limit their ability to share information and data both domestically, as well as with foreign entities and

authorities. The problem is exacerbated by the fact that there are so many separate registries in existence, all with variable taxonomy and data definitions, processes, and standards of record-keeping.[10]

2.3 POTENTIAL FOR A GLOBAL REGISTRY OF BENEFICIAL OWNERSHIP UNDERPINNED BY BLOCKCHAIN TECHNOLOGY

A number of institutions, organisations, and governments have already begun to demonstrate and implement proof-of-concept designs seeking to build on blockchain's potential as a 'single source of truth' for transaction and ownership data. In May 2016, Delaware announced the official public launch of its 'Blockchain Initiative', which will enable corporations to utilise blockchain technology for the registration and transfer of ownership of shares of stock and has the potential to address the lack of beneficial ownership tracking in the securities markets.[11] Countries including Sweden, Ukraine, and Georgia have begun experimenting with blockchain-based registries of land title to track property ownership.[12] In the private sector, music streaming services such as Spotify are looking to utilise blockchain to tag songs with the proper metadata, thereby ensuring that royalties go to the correct songwriters, artists or rightsholders. Other companies, such as SAP Ariba and Everledger, are utilising the technology in the tracking and tracing of valuable goods such as diamonds by creating a digital thumbprint of the asset, which is then stored on the blockchain. This digital thumbprint, which includes information relating to the object's history, transport, events and ownership, can then be relied upon by multiple stakeholders across global supply chains to verify authenticity.

The transparency, immutability, and security offered by blockchain makes it ideally suited for use in record-keeping, particularly with regards to the ownership of assets. This puts it in a unique position to address many of the shortcomings evident in current legacy solutions to the problems identified by the FATF and the OECD.

2.3.1 ENSURING REAL-TIME ACCURACY AND VERIFICATION OF OWNERSHIP INFORMATION

As noted above, current iterations of centralised companies' registries provide a passive snapshot of asset or account ownership at a given moment in time. These registries are generally unable—and the companies themselves, often unwilling—to provide dynamic updates on changes to ownership and/or control of a given customer or entity. The blockchain, however, allows for the ledger to be updated in close to real-time with changes to the asset holdings or control levels of multiple parties. This could, for instance, reduce the risk of related parties disaggregating their holdings (to below, for instance, 25%) in the immediate lead-up to a reporting period, and then subsequently resuming control.

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[10] Note that a number of organisations are currently exploring options to redress some of the challenges relating to data standardisation in these types of registries, including through the development of standardised identifiers such as the Global Legal Entity Identifier (LEI) Index, the Register of Legal Organisations (ROLO), and the draft ISO 29003—Identity Proofing (of persons, organisations, devices and software). In April 2016, OpenCorporates, the B Team, Transparency International, Global Witness, the Web Foundation, and the ONE Campaign announced a collaborative effort to develop a global register of beneficial ownership. The group has committed to using "open" data in line with the International Open Data Charter (as endorsed in the G20 Anti-Corruption Open Data Principles), which calls for the implementation of unique and non-proprietary identifiers.

[11] See M. O'Toole, M.K. Reilly, 'The First Block in the Chain: Proposed Amendments to the DGCL Pave the Way for Distributed Ledgers and Beyond,' Harvard Law School Forum on Corporate Governance and Financial Regulation, 16 March 2017.

[12] See G. Chavez-Dreyfuss, 'Sweden tests blockchain technology for land registry,' Reuters, 16 June 2016; L. Shin, 'The First Government to Secure Land Titles on the Bitcoin Blockchain Expands Project,' *Forbes*, 7 February 2017.

Current legacy registries also lack adequate verification mechanisms. Although many jurisdictions apply criminal and/or civil sanctions for supplying false or misleading information, it is both highly resource-intensive to conduct random audit checks of information, and difficult, if not impossible, to distinguish in many cases between incidents of innocent mistake and deliberate obfuscation. However, utilising a permissioned version of the blockchain would allow for trusted third-party intermediaries (whether it be a government agency, financial institution, legal or accounting firm, or credit referencing agency) to authenticate documents or information and subsequently verify or 'stamp' the digital identity of the relevant individual or entity. Third parties could then rely upon the fact that the data has been co-stamped by a trusted validator as proof of authentication (though not necessarily of 'accuracy', as the blockchain mechanism does not in and of itself solve issues of reliability of beneficial ownership data arising from the use of nominees and corporate directors, etc. If incorrect or misleading data is used as an input, as long as the correct protocols are utilised, it will be accepted by the network and added to the blockchain).

2.3.2 INCREASED SECURITY AND CONTROL OVER SENSITIVE PERSONAL AND COMMERCIAL INFORMATION

The centralisation of current companies' registries (whether national or, as proposed, global) creates significant security challenges. If an external party hacks into the database, they could potentially alter the ledger, moving funds, transferring ownership or destroying records completely. Even more difficult to detect is the case of the corrupt insider, covering their tracks as they go. As a result, substantial resources are required to be expended to verify the integrity of these types of centralised databases.

The decentralised and distributed nature of the blockchain system architecture means that no single party retains control, and that there can be no single point of failure through which a hacker or insider could corrupt the ledger's contents. This means that an ownership register underpinned by blockchain technology could be deployed faster and with fewer resources, and with the added benefit of automatic reconciliation in real time.

Current moves towards implementation of central public registries have raised issues regarding potential violations of individual privacy, as well as the potential for misuse or abuse of personal information by governments lacking sufficient data protection mechanisms. Legitimate concerns have also been raised regarding increased risks of individual reprisal arising from the public exposure of beneficial ownership information. This would expose certain classes of individuals (namely those with significant net worth or who occupy high profile positions) to higher risks of identity theft, cyber-crime, extortion, and kidnapping and ransom. Using a distributed ledger system such as blockchain would also allow individuals and entities to retain greater control over their own sensitive personal and commercial information, as private data and documents can only be decrypted with the private key of the owner (who can allow, or set permissions, to enable that key to be shared with the parties and in the circumstances that he/she chooses). Blockchain technology could provide the owner of the data with the ability to track the whole history of who has seen or used their data, providing both a comprehensive audit trail as well as enabling greater control over how, when, and by whom such data is accessed and used.

2.3.3 ENHANCED AUDIT TRANSPARENCY

The immutability and transparency of the blockchain also creates a consolidated audit trail. Regulators, tax authorities, law enforcement agencies, financial institutions and other designated entities could rely on a blockchain-based system to record detailed and precise histories of transactions and asset movements (including documents shared and compliance activities undertaken). This would simplify record-keeping and audit procedures, and greatly reduce the time, cost, and risks of verifying and enforcing regulatory compliance. By utilising

common data standards, blockchain-based ledgers could also enhance accessibility and encourage greater sharing of company identification and ownership information.

2.3.4 OPENING UP THE POTENTIAL OF GLOBALLY-LINKED REGISTRIES

There are a number of issues that impact the ability of government authorities and agencies to obtain and share information on beneficial ownership and control. Some of these issues arise from the fact that sovereign states retain the right to determine what can be shared, when, by and with whom, and how. In some jurisdictions, such as the Cook Islands, access to information requires consent, and corporate records can only be examined in the Companies Office Registry if the relevant company under investigation allows it. In others, such as Nauru, secrecy laws prohibit the inspection of corporation records for regulatory and enforcement purposes, even where illicit activity is suspected. The Cayman Islands, meanwhile, imposes prison terms not only for handing over information to unauthorised parties, but also for merely asking for such information.[13] By decentralising the ownership registries, blockchain technology has the potential to at least reduce, if not overcome, many of these barriers to the disclosure and distribution of information of beneficial ownership information.

2.3.5 REDUCING CORRUPTION, FRAUD AND INCREASING TRUST

Related to the above is blockchain's capacity to reduce fraud by increasing trust and security through greater transparency. Corruption can easily lead to counterfeiting or alteration of official records, whether public or privately held. Government insiders can change records to falsify payment types, dates and amounts, or alter the listed owner of a particular asset, account or company. Likewise, a malicious actor such as a cyber-hacker could attempt to selectively alter or destroy records, such as payment records or trades between parties. However, because each transaction on the blockchain is uniquely encoded via cryptography, and this encoding is validated by other parties (through various consensus mechanisms), any attempt to alter or remove transaction information would be detected and rejected by other nodes.

The potential for blockchain technology to be used to increase transparency has already been demonstrated within the non-profit organisation (NPO) sector. NPOs have been identified by the FATF (not without controversy) as being particularly vulnerable to terrorist financing abuse. Terrorists and terrorist organisations may seek to exploit NPOs to raise and move funds, provide logistical support, encourage terrorist recruitment, or otherwise support terrorist organisations and operations. This misuse not only facilitates terrorist activity, but also undermines donor confidence and jeopardises the very integrity of the NPO sector. This has enormous ramifications in places such as China, where philanthropy rose 10-fold to US$15 billion in the decade through 2014 despite the sector being plagued by scandals and mismanagement. However, Chinese billionaire Jack Ma is now using blockchain technology to record transactions and improve the accountability of the country's philanthropic organisations, in an effort to reduce the opacity of existing arrangements and their potential for misuse and/or abuse. Ant Financial, an affiliate of Alibaba Group Holding Ltd, utilises a tamper-proof ledger based on blockchain technology to record donations made by the more than 400 million users of Alipay, the online payments and investment service. By utilising this blockchain technology, donors on its 'Ant Love' charity platform are able to track

[13] Tax Justice Network, 'Financial Secrecy Index – Narrative Report on Cayman Islands,' September 2015.

transaction histories and gain a clearer understanding of where their funds go and how they're used.[14]

2.3.6 REDUCED COMPLIANCE BURDEN FOR REGULATED ENTITIES

Enabling personal or commercial client identification information to be shared between regulated institutions through a secure, distributed database underpinned by blockchain could eliminate duplicative efforts in customer screening and on-boarding for CDD/KYC purposes, allowing for resources to be more effectively allocated to higher-risk business areas, clients, and transactions.[15]

3 CONCLUSION AND NEXT STEPS

The political momentum behind the push for timely and adequate access to accurate data on beneficial ownership shows no sign of abating, and we are currently witnessing a proliferation of regulations, directives, standards, and guidelines in this field. In April 2016, the G-20 Finance Ministers and Central Bank Governors called on the FATF and the OECD Global Forum to consider ways to improve implementation of the international standards on transparency, including on the availability of beneficial ownership information and its international exchange. The EU's 4th Anti-Money Laundering Directive, including requirements for the establishment of central registries, must be transposed into domestic law by 26 June 2017. Meanwhile, as of December 2016, 54 jurisdictions have committed to the adoption and implementation of a new single global standard governing the automatic and reciprocal exchange of information on the beneficial ownership of companies and trusts with tax consequences.

The pace and scale of change in this environment creates opportunities for disruptive technologies such as blockchain to make a significant impact, but it also poses challenges. While blockchain has the potential to provide a "unifying" system architecture that could bring together disparate national approaches into a more cohesive global whole, there is still significant work to be done by both industry and the public sector. An immediate issue is to agree on basic standards.[16] In the medium- to long-term, issues such as privacy, security, authentication, authority, and critical scalability remain to be addressed.

Collaborating on complex issues such as these takes time. For now, industry, academia, and public policymakers are encouraged to focus on further elaborating the key principles underpinning the potential application of blockchain technology to beneficial ownership data, and then seek to develop pilot studies based on existing (centralised) technology that can exercise those principles fully. This could then be scaled out across the wider ecosystem with blockchain as a part of the solution.

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[14] L.Y. Chen, 'Jack Ma Takes on Murky Chinese Charities in Blockchain Foray,' Bloomberg Technology, 31 July 2016.

[15] Noting, however, that there are only limited 'safe-harbour' provisions under the international AML/CFT standards allowing for reliance on CDD/KYC conducted by third parties. In most circumstances, each regulated entity will still ultimately be responsible for ensuring compliance with the relevant regulations. CDD/KYC checks would still be required when the prospective account is, e.g., an individual setting up a bank account for the first time, or if there were doubts regarding the authenticity or accuracy of the data for an existing customer of another institution (such as when the data has only been validated by a single source).

[16] Noting that some work is already being done on this front, e.g. through the work of the ISO Tech Committee 307 – see https://www.iso.org/committee/6266604.html.

Both financial regulators and tax administrations must, however, begin the debate now on whether and how the distributed ledger technology underlying blockchain could be used to provide a future platform for registries (whether national or global) of information on the ultimate beneficial ownership of corporate vehicles and legal arrangements, while existing legislative and technological implementation levels remain low and the political will for reform remains high.